CLAIMS

1. Substantially pure growth differentiation factor-16 (GDF-16).

2. An isolated polynucleotide sequence encoding the GDF-16 polypeptide of claim 1.

3. An isolated polynucleotide selected from the group consisting of:
   a) FIGURE 1, wherein T can also be U;
   b) nucleic acid sequences complementary to FIGURE 1;
   c) fragments of a) or b) that are at least 15 bases in length and that will selectively hybridize to DNA which encodes the GDF-16 polypeptide of FIGURE 1.

4. The polynucleotide sequence of claim 2, wherein the polynucleotide is isolated from a mammalian cell.

5. The polynucleotide of claim 4, wherein the mammalian cell is selected from the group consisting of mouse, rat, and human cell.

6. An expression vector including the polynucleotide of claim 2.

7. The vector of claim 6, wherein the vector is a plasmid.

8. The vector of claim 6, wherein the vector is a virus.

9. A host cell stably transformed with the vector of claim 6.

10. The host cell of claim 9, wherein the cell is prokaryotic.

11. The host cell of claim 9, wherein the cell is eukaryotic.

12. Antibodies that bind to the polypeptide of claim 1 or fragments thereof.

13. The antibodies of claim 12, wherein the antibodies are polyclonal.

14. The antibodies of claim 12, wherein the antibodies are monoclonal.

15. A method of detecting a cell proliferative disorder comprising contacting the antibody of claim 12 with a specimen of a subject suspected of having a GDF-16 associated disorder and detecting binding of the antibody.

16. The method of claim 15, wherein the detecting is *in vivo*.

17. The method of claim 16, wherein the antibody is detectably labeled.

18. The method of claim 17, wherein the detectable label is selected from the group consisting of a radioisotope, a fluorescent compound, a bioluminescent compound and a chemiluminescent compound.

19. The method of claim 15, wherein the detection is *in vitro*.

20. The method of claim 19, wherein the antibody is detectably labeled.

21. The method of claim 20, wherein the label is selected from the group consisting of a radioisotope, a fluorescent compound, a bioluminescent compound, a chemoluminescent compound and an enzyme.

22. A method of treating a cell proliferative disorder or immunologic disorder associated with expression of GDF-16, comprising contacting the cells with a reagent which suppresses the GDF-16 activity.

23. The method of claim 22, wherein the reagent is an anti-GDF-16 antibody.

24. The method of claim 22, wherein the reagent is a GDF-16 antisense sequence.

25. The method of claim 22, wherein the reagent which suppresses GDF-16 activity is introduced to a cell using a vector.

26. The method of claim 25, wherein the vector is a colloidal dispersion system.

27. The method of claim 26, wherein the colloidal dispersion system is a liposome.

28. The method of claim 27, wherein the liposome is essentially target specific.

29. The method of claim 28, wherein the liposome is anatomically targeted.

30. The method of claim 29, wherein the liposome is mechanistically targeted.

31. The method of claim 30, wherein the mechanistic targeting is passive.

32. The method of claim 30, wherein the mechanistic targeting is active.

33. The method of claim 32, wherein the liposome is actively targeted by coupling with a moiety selected from the group consisting of a sugar, a glycolipid, and a protein.

34. The method of claim 33, wherein the protein moiety is an antibody.

35. The method of claim 34, wherein the vector is a virus.

36. The method of claim 35, wherein the virus is an RNA virus.

37. The method of claim 36, wherein the RNA virus is a retrovirus.

38. The method of claim 37, wherein the retrovirus is essentially target specific.

39. The method of claim 38, wherein a moiety for target specificity is encoded by a polynucleotide inserted into the retroviral genome.

40. The method of claim 38, wherein a moiety for target specificity is selected from the group consisting of a sugar, a glycolipid, and a protein.

41. The method of claim 40, wherein the protein is an antibody.

42. A method for identifying a GDF-16 receptor polypeptide comprising:

a) incubating components comprising GDF-16 polypeptide and a cell expressing a receptor or a soluble receptor under conditions sufficient to allow the GDF-16 to bind to the receptor;

b) measuring the binding of the GDF-16 polypeptide to the receptor; and

c) isolating the receptor.